

**SYSTEMS INCLUDING HEATED SHOWER HEADS FOR
THIN FILM DEPOSITION AND RELATED METHODS**

Abstract

5 A deposition apparatus is disclosed for depositing a layer on a substrate such as a semiconductor wafer. The deposition apparatus may include a process chamber, and a susceptor in the process chamber with the susceptor being configured to receive a substrate for depositing a thin layer thereon. The deposition apparatus may also include a showerhead on a side of the process
10 chamber with the showerhead being configured to receive reaction gases and to introduce the reaction gases into the process chamber. The showerhead may include a heating element therein for heating reaction gases prior to introducing the reaction gases into the reaction chamber. Related methods are also discussed.

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